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March 14, 1991

Ms. Beth Brown
Remedial Project Manager
KY/TN Unit, NSMS
Superfund Branch
U. S. Environmental Protection Agency
345 Courtland St.
Atlanta, GA 30365

Re: Collierville Site - Phase III

Dear Ms. Brown:

Pursuant to our telephone conversation of March 6, 1991, EnSafe is submitting for your review a breakdown of field activities scheduled for Phase III at the Collierville Site. Phase III activities will include, a time domain electromagnetic survey, the installation of nine additional monitoring wells, eight of which will be completed in the "shallow" aquifer, and one monitoring well completed in the Memphis Sands. These activities are currently scheduled to begin Monday, March 18, 1991 pending approval of the methodologies outlined below.

All work completed during Phase III of the field investigation will be conducted in accordance with the approved Site Work Plan, Sampling Plan, Health and Safety Plan, and Quality Assurance Plan (December 1989). All samples will be analyzed for those constituents outlined in the approved Data Validation Report (June 1990).

Geophysical Survey

To aid in determining the elevation of the top, the possible existence of shallow undulations in the clay surface, relative thickness, and pinch-out of the Jackson Clay formation, a shallow time domain electromagnetic (TDEM) survey will be conducted. The electromagnetic survey is proposed to be conducted in the area of the former surface impoundment and east of Byhalia Rd (Attachment A). The exact location for survey lines are tentative and will be subject to field conditions. The success of TDEM will be dependent upon the absence of underground utilities or interference from above ground structures and/or metallic features.

Shallow Monitoring Wells
Eight shallow wells have been proposed for the Phase III investigation (Attachment B). The shallow wells are proposed for the following locations pursuant to EPA's comments:

EPA Comment	Proposed Location
1) North of MW-19 and 43	1) one well north-northwest of the Site at location A,
2) North of MW-23 and 25, and west of MW-35	2) two wells on the Collierville site at locations B and C,
3) South of MW-3 and MW-31, and east of MW-31	3) two wells east of Byhalia Rd. at locations D and E,
4) EnSafe proposed wells west of the Collierville Site	4) three wells installed west of the Site at locations H, I, and J.

Final well placement for locations D and E will be determined during Phase III of the RI utilizing a stainless steel hydropunch with stainless steel inlet screens as outlined below.

Hydropunch
Drilling techniques for hydropunch sampling will incorporate the same techniques as approved in the Collierville Site work plan. However, in lieu of immediate well installation the hydropunch will be attached to the drill rods and lowered through the hollow stem augers and driven a minimum of five feet into the saturated zone or five feet beyond the cutting head of the lead auger. The hydropunch will then be backed up approximately eighteen (18) inches to open the sleeve and expose the screen. The hydropunch will be left in the open position for a minimum of 30 minutes to ensure that sufficient groundwater has been recovered for sampling. The hydropunch will then be removed from the boring.

Immediately upon retrieval, the hydropunch will be opened and a groundwater sample will be collected. The sample will be held at 4 degrees Centigrade for shipment. Hydropunch samples will be transported to a local laboratory for analyses daily. The samples will be screened for trichloroethylene and dichloroethylene utilizing the co-distillation method outlined in the approved Data Validation Report. If elevated levels of chlorinated hydrocarbons are encountered the borehole will be abandoned as outlined in the approved work plan and a new boring will be installed. Each successive boring will progress outward

until the extent of contamination has been determined. When "clean" water has been encountered a well will be set.

Previous investigations have indicated that Jackson Clay does not exist east of Byhalia Rd. Therefore, wells D and E will be completed at a depth which sufficiently projects an extension of the clay layer (approximately 60-70 feet below ground surface). These wells may represent conditions in the upper elevations of the Memphis Sands.

Deep Wells

One deep well has been proposed for the Phase III field investigation. The well has been identified as "F" on the enclosed attachment.

Well construction will incorporate augering to the top of the Jackson clay utilizing a minimum 10 1/4 inch O.D. augers. In order to ensure sufficient annular space between the potective casing and the borehole wall the borehole may be reamed with the augers or overdrilled with a twelve inch mud rotary bit. The boring will then be cased with an eight (8) inch minimum diameter steel casing and grout sealed in place. The grout will be allowed to set for a minimum of twenty-four hours before drilling is resumed. The boring will then be advanced through the center of the casing into the Jackson Clay and Memphis Sands utilizing water or mud rotary techniques. If mud rotary is utilized the material will be an EPA approved bentonite clay material. Soil samples will be collected at five foot intervals for lithologic interpretations to total depth. The well will continue 30 feet into the Memphis Sands.

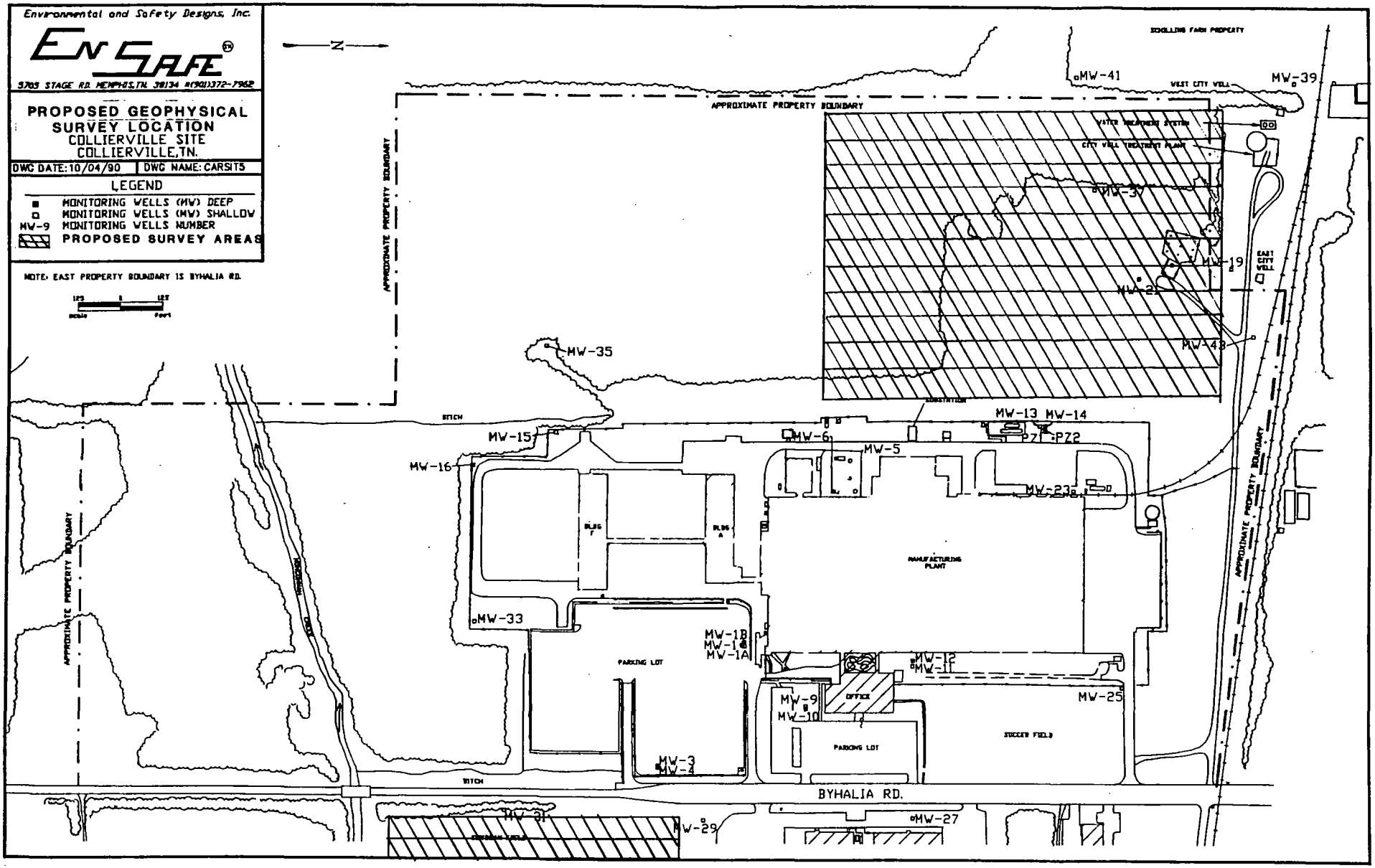
No additional deep wells are proposed for Phase III of the investigation. However, the Piper Indusrtry wells and well "G" (Attachment B) will be sampled during subsequent groundwater sampling events. Groundwater samples are intended to be representative of conditions in the Memphis Sands aquifer east and west of the city of Collierville wellfield .

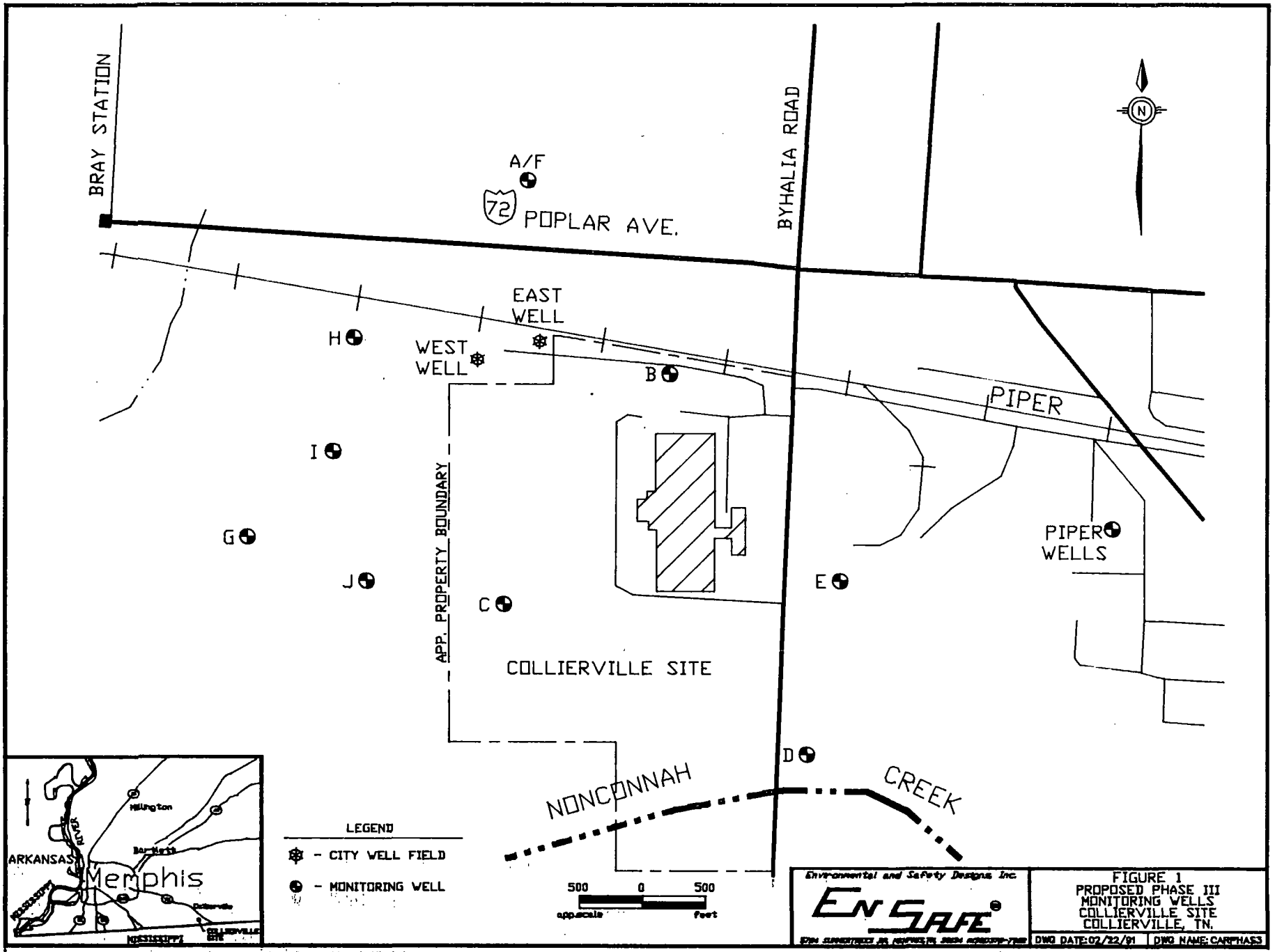
Sincerely,

Paul V. Stoddard
Manager, Geological Services

cc Nelson Wong

Attachment A




BRAY STATION
BYHALIA ROAD
A/F
72
POPLAR AVE.
EAST WELL
WEST WELL
H
B
PIPER
I
APP. PROPERTY BOUNDARY
G
J
C
E
PIPER WELLS
COLLIERVILLE SITE
D
NONCONNAH CREEK
ARKANSAS
Memphis
LEGEND
- CITY WELL FIELD
- MONITORING WELL
500 0 500
approx. scale
feet
Environmental and Safety Designs Inc.
EnSafe
FIGURE 1
PROPOSED PHASE III
MONITORING WELLS
COLLIERVILLE SITE
COLLIERVILLE, TN.
DWG DATE: 02/22/91
DWG NAME: CARPHAS3